



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,932	09/14/2006	Kaoru Narita	NEC P16165	2204
27667	7590	01/29/2010	EXAMINER	
HAYES SOLOWAY P.C. 3450 E. SUNRISE DRIVE, SUITE 140 TUCSON, AZ 85718			GLENN, KIMBERLY E	
			ART UNIT	PAPER NUMBER
			2817	
			NOTIFICATION DATE	DELIVERY MODE
			01/29/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

admin@hayes-soloway.com  
smckniff@hayes-soloway.com  
nsoloway@hayes-soloway.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/598,932	NARITA, KAORU	
	<b>Examiner</b>	<b>Art Unit</b>	
	KIMBERLY E. GLENN	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 26 August 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-25 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,4,5,12-14,24 and 25 is/are rejected.  
 7) Claim(s) 2 3 6-11 15-23 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 26 August 2009 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12 -14 are rejected under 35 U.S.C. 102(b) as being anticipated by Gruchalla et al US Patent 5,157,361.

Gruchalla et al disclose a nonlinear transmission line comprising electrodes 14 and 16 and dielectric formed by the depletion region 18. The dielectric 18 is surrounding by region 22 and 24 which are doped to comprise a semiconductor diode. The regions 22 and 24 isolated the electrodes from the dielectric. The capacitance per unit length of transmission line formed by electrodes and the dielectric is a function of the signal voltage applied across the electrodes. A signal source 12 is applied to electrodes 14 16 therefore inherently on electrode with function a signal conductor and the other electrode will function as a reference (i.e. ground) conductor. (Column 12; lines 38-63)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5, 24 ad 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) figure 1 in view of Gruchalla et al US Patent 5,157,361.

AAPA disclose a circuit comprising a general transmission line 1 serving as a data bus connecting input/output circuits 3 present in plurality integrated circuit chips 2. The transmission lines transmit data between the integrated circuits.

Thus, AAPA is shown to teach all the limitation of the claims with the exception of the transmission line having an element that changes an effective reactance per unit length depending on at least one of a signal voltage and a signal current.

Gruchalla et al disclose a nonlinear transmission line comprising electrodes 14 and 16 and dielectric formed by the depletion region 18. The dielectric 18 is surrounding by region 22 and 24 which are doped to comprise a semiconductor diode. The regions 22 and 24 isolated the electrodes from the dielectric. The capacitance per unit length of transmission line formed by electrodes and the dielectric is a function of the signal voltage applied across the electrodes. A signal source 12 is applied to electrodes 14 16 therefore inherently on electrode with function a signal conductor and the other electrode will function as a reference (i.e. ground) conductor.

Therefore, one of ordinary skill in the art would have found it obvious to replace the general transmission line of AAPA with a nonlinear transmission line as taught by Gruchalla et al.

The motivation for this modification would have been to provide a transmission line with the advantageous benefit of generating signals exhibiting fast transition times and wherein the signals have high signal amplitude. (Column 1; line 62-65)

***Allowable Subject Matter***

Claims 2, 3, 6-11 and 15-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments filed 8/26/09 have been fully considered but they are not persuasive. With regards to applicant arguments that the Gruchalla reference discloses a transmission line inside an integrated circuit and that the present application connected to the input/output circuit of an integrated circuit; the transmission line disclosed by Gruchalla is given its broadest reasonable interpretation and therefore the transmission line would have been capable of transmitting signals whether disclosed inside or outside the integrated circuit.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY E. GLENN whose telephone number is (571)272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly E Glenn  
Examiner  
Art Unit 2817

December 16, 2009

Application/Control Number: 10/598,932  
Art Unit: 2817

Page 6

/K. E. G./  
Examiner, Art Unit 2817

/Robert Pascal/  
Supervisory Patent Examiner, Art Unit 2817